

ABSTRACT

A premixed air-fuel mixture supply device is joined to a combustor liner included in a combustor for a gas turbine or an aircraft engine. The premixed air-fuel mixture supply device has a pilot fuel injection unit having an inner wall, and a prevaporizing, premixing main fuel injection unit having an outer wall surrounding the inner wall. A combustion air passage is defined by the inner and the outer wall. An intermediate wall is disposed in the combustion air passage so as to divide an upstream part of the combustion air passage into a secondary combustion air passage surrounding the inner wall, and an outer combustion air passage surrounding the intermediate wall. Fuel inject holes are formed in the intermediate wall to inject fuel radially outward into the outer combustion air passage. A swirling device is disposed in the secondary combustion air passage to swirl combustion air flowing through the secondary combustion air passage. An atomization lip is formed in a tail part of the intermediate wall.